LIST 1 – DISTRIBUTIVE SERIES.

For each of the statistic variables in the tasks below determine whether it is a continuous or discrete variable. For continuous variables choose the appropriate number of classes. Draw frequency histograms and empirical cumulative distribution. Calculate the mean μ, variance σ^2, standard deviation σ, the median m_e, the lower quartile Q_1 and the upper quartile Q_3, skewness g_1 and kurtosis K. Draw the box-and-whisker plots. Comment the results. What can be said on the basis of these parameters about the symmetry of distributions?

Task 1. 20 major foreign investors in Poland were studied in terms of investment (to end 2005) million dollars. Obtained data (in million dollars): 1141,9   1011,3   616,5   505   412   370   350   285   282   282   277,3   248   232   226   220   210   200   200   200   185.

Task 2. The university bookstore conducted a random survey of expenditure of books. The following results were obtained (in PLN): 24.0   28.7   31.0   33.6   24.8   29.1   31.1   33.6   25.0   29.1   31.4   33.9   25.6   29.5   31.6   34.1   26.1   39.6   31.8   34.8   36.5   29.9   31.8   35.0   26.6   30.0   32.0   35.3.

Task 5. The average life expectancy of women in 22 European countries was studied to give results: 73 73 74 74 75 77 77 77 77 78 79 79 80 81 81 81 81 82 82 83 83 84. Also the average life expectancy for men in these countries was examined and gave the results: 61 59 66 67 68 68 68 72 70 73 73 75 73 75 74 76 73 74 76 76 74 76.

Task 6. The number of failures buses within 30 days in a bus depot Obtained data:

The number of failures per day	0	1	2	3	4
The number of days	5	15	6	3	1